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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/938,698 | UEMURA ET AL. | |
| | Examiner | Art Unit | |
| | Karabi Guharay | 2879 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment, filed on 01/19/05.
2. ☒ The allowed claim(s) is/are 9,10,12 and 13.
3. ☒ The drawings filed on 23 August 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date <u>8/23/01</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

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Amendment, filed on 01/19/2005 has been considered and entered.

Claims 2, 4, 5, 11 and 14-17 have been cancelled.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Eric S. Hyman on 02/09/2005.

The application has been amended as follows:

In the title

Pursuant to MPEP § 606.01, the title has been changed as follows:

---VACUUM FLUORESCENT DISPLAY HAVING X-RAY SHIELDING CAP-----

In the claims

Claim 9 has been replaced by following text:

-----A vacuum fluorescent display comprising:

a cathode electrode for emitting electrons; a grid electrode for extracting the electrons from said cathode electrode; an anode electrode for accelerating the electrons extracted from said cathode electrode; at least one envelope which accommodates said cathode electrode, said grid electrode, and said anode electrode in a vacuum space and has a display portion having light transmission properties, a phosphor layer formed on an inner surface of the display portion of said envelope and adapted to emit light

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upon bombardment of the electrons accelerated by said anode electrode; and a cap made of an X-ray shielding material and supported outside said envelope so as to surround the display portion of said envelope through a gap, said cap having a light exit surface from which the light emitted from said phosphor layer emerges through the display portion of said envelope, wherein said cap surrounds said envelope entirely; wherein said envelope has a stem in which a plurality of lead pins to be connected to said electrodes are buried and which has an outer diameter slightly larger than that of said envelope, and a portion between a tip of an opening of said cap and said envelope is sealed by the stem to form the gap, wherein said stem is made of an insulating elastic material; a cooling liquid sealed in the gap and a liquid reservoir formed in the stem to communicate with the gap. -----

Claim 12 has been replaced by the following text:

-----A vacuum fluorescent display comprising:

a cathode electrode for emitting electrons; a grid electrode for extracting the electrons from said cathode electrode; an anode electrode for accelerating the electrons extracted from said cathode electrode; at least one envelope which accommodates said cathode electrode, said grid electrode, and said anode electrode in a vacuum space, wherein the envelope comprises a display portion having light transmission properties, a phosphor layer formed on an inner surface of the display portion of said envelope and adapted to emit light upon bombardment of the electrons accelerated by said anode electrode; and a cap made of an X-ray shielding material and supported outside said envelope so as to surround the display portion of said envelope through a gap, said cap

having a light exit surface from which the light emitted from said phosphor layer emerges through the display portion of said envelope and having a cylindrical-shaped bottom to cover the display portion of the envelope and a side surface of the envelope, a stem in which a plurality of lead pins to be connected to said electrodes are buried and which has an outer diameter slightly larger than that of said envelope, and a portion between a tip of an opening of said cap and said envelope is sealed by the stem to form the gap; wherein said cap surrounds said envelope entirely. -----

Allowable Subject Matter

Claims 9-10, & 12-13 are allowed over the prior art of record.

Examiner's Reasons for Allowance

The following is an examiner's statement of reason for allowance:

Regarding claims 9 & 12, the prior art of record neither shows nor suggests a vacuum fluorescent display with an envelope with a stem made of elastic material, which has an outer diameter slightly larger than the envelope and a cap made of an X-ray shielding material and supported outside the envelope so as to surround the display portion of the envelope through a gap where a portion between a tip of an opening of the cap and envelope is sealed by the stem, and the cap surrounds the envelope entirely.

Regarding claim 10, the prior art of record neither shows nor suggests a vacuum fluorescent display with a cap made of an X-ray shielding material and supported outside the envelope so as to surround the display portion of the envelope through a

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corresponding to a plurality of colors and the cap surrounds display portion of the plurality of envelopes all together.

Claim 13 is allowed being dependent on claim 12.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Other Prior Art Cited


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure : Takezawa et al. (US 6130497); Meglio et al. (US 5877583).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Karabi Guharay
Patent Examiner
Art Unit 2879